



## SEED AND SEEDLING EMERGENCE STUDIES IN TWO COMMERCIALY IMPORTANT BAMBOO SPECIES – *DENDROCALAMUS BRANDISII* (MUNRO) KURZ AND *D. SIKKIMENSIS* GAMBLE

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**ABSTRACT:** *Dendrocalamus brandisii* (Munro) Kurz is a very large evergreen edible bamboo, mostly found in South and North-Eastern India and Myanmar and introduced to South East Asia, whereas *Dendrocalamus sikkimensis* Gamble is a large sympodial bamboo species with caespitose stems and few culms distributed in North-Eastern India, West Bengal, Sikkim, Arunachal Pradesh, Nagaland and Meghalaya. The study focuses on the seed and seedling attributes of these two commercially important sympodial edible bamboos. Seeds of *D. brandisii* and *D. sikkimensis*, with initial viability (60 and 52% seed germination), when stored for 36 months at 4°C and 45% relative humidity (RH) maintained their viability throughout the storage period. Under ambient temperature (room temperature: about 32°C and 16°C), the seeds were viable (60% germination) only up to five and ten months for *D. brandisii*, and four and ten months (52% germination) for *D. sikkimensis*, respectively. Seed moisture content significantly influenced seed viability and germination. An increase of moisture content from 8 -12% resulted in a complete loss of germination (0%) for *D. brandisii* and *D. sikkimensis*. Seed germination was highest in vermiculite medium for *D. brandisii* (60%) and *D. sikkimensis* (52%), followed by quartz sand (55 & 48%), germination paper (55 & 47%) and soil (36 & 35%), respectively. From the experiment, it was clear that initial seed storage temperature and germination media contributed significantly in the vigour of seedlings. But after transferring the seedlings to the nursery, observation under field conditions for six months proved that initial storage temperature and germination media did not influence the seedling vigour. Seedlings of *D. sikkimensis* grown in the nursery showed a higher growth rate and biomass accumulation than *D. brandisii* seedlings. There was no significant difference in the relative growth rate of *D. brandisii* and *D. sikkimensis* but the Net Assimilation Rate was higher for *D. sikkimensis* when compared with *D. brandisii* seedlings. The results will contribute for establishing plantations using seedlings raised through seed propagation.

**Keywords:** *Dendrocalamus brandisii*, *D. sikkimensis*, seed propagation, seedling biomass, viability

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### INTRODUCTION

*Dendrocalamus brandisii* (Munro) Kurz is a very large evergreen edible bamboo, mostly found in South and North-Eastern India and Myanmar and introduced to South-East Asia. This sympodial bamboo is widely cultivated in Karnataka and Kerala and the species is found growing in the tropical forests, mainly on calcareous rocks up to an altitude of 1300 m. This species was widely introduced in Coorg, Karnataka between 1913-24. Gregarious flowering is reported

from Manipur during 1987-88 (Seethalakshmi and Kumar, 1998) and in Coorg areas of Karnataka during 2010-2012.

*Dendrocalamus sikkimensis* Gamble is a large sympodial bamboo species distributed in North-Eastern India, West Bengal, Sikkim, Arunachal Pradesh, Nagaland and Meghalaya (Garo Hills) and can grow up to an altitude of 2100 m (Seethalakshmi and Kumar, 1998). It is used for fencing, posts, huts, ropes, boxes, water pipes, specially for 'Chungas' for